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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/648,370	08/27/2003	Keiji Taniguchi	0033-0900P	3706

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EXAMINER	
WOODS, ERIC V	

ART UNIT	PAPER NUMBER
2672	

DATE MAILED: 09/20/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/648,370	TANIGUCHI ET AL.	
	Examiner	Art Unit	
	Eric V. Woods	2672	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *02 May 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-19* is/are rejected.

7)☒ Claim(s) *20* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *02 May 2005* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

Applicant's arguments, see Remarks pages 1-9, filed 2 May 2005, with respect to the rejection(s) of claim(s) 1-19 under 35 U.S.C. 102(b) and 35 U.S.C. 103(a) have been fully considered and are persuasive. Therefore, all such rejections are withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of new references, as stated below.

The objections to the drawings stand withdrawn, as applicant has submitted new formal drawings.

The objections to claims 1 and 18 are withdrawn, since applicant has amended the claims to correct the deficiencies.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1-2 are rejected under 35 U.S.C. 103(a) as being unpatentable over Isono in view of Yamashita et al (US 6,584,219).

Isono et al. clearly discloses the equipment of claim 1. Figure 1 shows a panel, element 46, for the display of both a two and three-dimensional image. Column 4, lines 32 – 34, states, "A parallax barrier is electrically and programably displayed on the whole screen of the panel 28 in the 3D mode and a portion of the screen in the (2+3) or (2+3)D) mode." Lines 45 – 46 state, "No parallax barrier is displayed in the 2D mode." Thus, a parallax optic, parallax barrier element 28 of Figure 1, can be selectively formed for the display of a three-dimensional image or removed for the display of a two-dimensional image. Column 6, lines 15 – 23, describes a control portion to control image display and generation of a parallax barrier. "In response to an input command, the computer 20 controls an image data processor 32 to control image display, a controller 22 to control the generation of a barrier, and a controller 58 to control the enlarging section 56. Since the computer 20 is used as not only a control unit but also an arithmetic operation processing unit, in order to reduce the load, the control of each section is executed by the processor 32 and the controllers 22 and 58." Additionally, lines 24 – 36 state, "In response to an input display control command, the computer 20 sets display mode data, window data, view point count data, signal kind data, and input/output data as control data into registers 80-1 to 80-5 of the processor 32 and also sets the display mode data, the window data, and the view point count data as control data into registers 22-1 to 22-3 of the controller 22. Even when the display control command is supplied from the communication line 16 through the interface 12 the

computer 20 sets the control data. The display mode data includes data 2D, 3D, (2+3)D and (2+3)D data corresponding to the 2D mode, 3D mode, (2+3)D mode, and (2+3)D mode, respectively." Thus, Isono describes a control portion instructing switching of the display between two and three-dimensional images involving a parallax optic and generating data for the display from image data based on said instructing.

However, Isono does not expressly teach that such data is generated from a common data set – that is, that the same data set is used to generate both.

Yamashita teaches a system that takes in 2D images and outputs stereoscopic images (1:39-55). Prima facie the 2D and stereoscopic images are produced from the same base image. The system of Yamashita can run for example on a personal computer (Yamashita 40:47-67), and can be used emphasize a particular element, such as an active element. The point is that the same base data set is used to generate both the 2-D and the 3-D image, where the left and right eye images would then be supplied to the system of Isono, since Yamashita is also faster and utilizes newer computer equipment, and has a simpler design, while Isono provides other information for obtaining the head-area position information required for the system to be most effective; for PC applications, Yamashita is generally silent as to precisely how the location of the user is specified, where Isono is not.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the techniques of Yamashita with the system of Isono. Yamashita provides a system that combines moving images with still images for this

conversion process in a more efficient manner that allows for control of the weight of the background image (39:12-40:45).

Claims 2, 3, and 4 are disclosed by Isono et al. Column 4, lines 32 – 34, states, "A parallax barrier is electrically and programably displayed on the whole screen of the panel 28 in the 3D mode and a portion of the screen in the (2+3) or (2+3)D) mode." Lines 45 – 46 state, "No parallax barrier is displayed in the 2D mode." Figures 11 and 13 show the composition of the parallax barrier including a liquid crystal layer placed between polarizing plates and glass plates. Column 3, lines 6 – 12, states, "A stripe barrier is electronically generated on the liquid crystal panel surface of the second layer. The image on the liquid crystal panel surface of the first layer can be stereoscopically seen. Further, since the generation of the stripe barrier can be electrically programably changed, a 3D image of an arbitrary number of view points ca be displayed." Thus, the display portion of Isono includes a liquid crystal device electrically selecting the presence or absence of a parallax optic. The electrically programmable parallax barrier including the polarizing plates of Figures 11 and 13 disclose the patterning phase contrast plate of claim 3 and selectively performing pattern display of a parallax barrier of claim 4.

Claim 17 is discloses by Isono et al. Figure 1 shows VRAM, element 34, for storing graphics data for display of a two and three-dimensional image and a display portion, element 100, that includes a display panel, element 46, for displaying two and three-dimensional images and a parallax barrier panel, element 28, for selectively forming a state where optical parallax is generated. Column 6, lines 15 – 23, states, "In

response to an input command, the computer 20 controls an image data processor 32 to control image display, a controller 22 to control the generation of a barrier, and a controller 58 to control the enlarging section 56. Since the computer 20 is used as not only a control unit but also an arithmetic operation processing unit, in order to reduce the load, the control of each section is executed by the processor 32 and the controllers 22 and 58." Also shown in Figure 1 is the image data processor, element 32, which controls the VRAM and display controllers. Column 6, lines 24 – 50, describes generating data for the display of two and three-dimensional images based on data common to the displayed image from memory in accordance with the input instruction and outputting a command, mode data, for enabling the display of one of two or three-dimensional images.

However, Isono does not expressly teach that such data is generated from a common data set – that is, that the same data set is used to generate both.

Yamashita teaches a system that takes in 2D images and outputs stereoscopic images (1:39-55). Prima facie the 2D and stereoscopic images are produced from the same base image. The system of Yamashita can run for example on a personal computer (Yamashita 40:47-67), and can be used emphasize a particular element, such as an active element. The point is that the same base data set is used to generate both the 2-D and the 3-D image, where the left and right eye images would then be supplied to the system of Isono, since Yamashita is also faster and utilizes newer computer equipment, and has a simpler design, while Isono provides other information for obtaining the head-area position information required for the system to be most

effective; for PC applications, Yamashita is generally silent as to precisely how the location of the user is specified, where Isono is not.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the techniques of Yamashita with the system of Isono. Yamashita provides a system that combines moving images with still images for this conversion process in a more efficient manner that allows for control of the weight of the background image (39:12-40:45).

Claims 5 – 16, 18, and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Isono and Yamashita as applied to claims 1 and 17 above, and further in view of U.S. Patent No. 6,765,568 to Swift et al.

Isono et al. as applied to claim 1 teaches of the equipment of claims 5, 9, and 13 except wherein said common data includes image data corresponding to several views and said control portion generates said data for the two-dimensional display based on said image data corresponding to said several views, and Yamashita teaches the use of common data, where the definition is comparable to that of the Remarks of 2 May 2005. Swift et al. teaches of an electronic stereoscopic media delivery system for distributing stereoscopic media in electronic form. Column 2, lines 29 – 44, states, "The preferred embodiment addresses the problem of delivering stereoscopic media in electronic form (images, videos, animations, object models, etc.). Firstly, it provides a single format with independent right and left channels (with an option for mixed or combined right and left channels) to represent the stereoscopic media. Secondly, it provides a means of displaying stereoscopic media inside a movable windowed area while eliminating

pseudostereo conditions during movement. Thirdly, it provides automatic and manual optimization adjustments such as parallax shift adjustment, brightness control, color adjustment, and cross-talk reduction to the stereoscopic media based on viewing hardware, monitor size, and media content for optimal viewing quality. Fourthly, it provides seamless support for monoscopic (2D) viewing modes allowing delivery of said stereoscopic media in a normal 2D viewing mode." Column 6, lines 32 – 46, states, "This invention can have greater distribution and market penetration since it is not dependent upon a physical viewing device. This viewing system can be toggled to display monoscopic, as well as various stereoscopic modes (color anaglyph, gray anaglyph, line interleaved, page-flipping, cross-eye, parallel viewing, etc.). In monoscopic mode, the image appears in 2D like other 2D web based images which allows all web users to view the images in 2D even if they do not have a stereoscopic viewing device.

This is accomplished by showing either the left or right mono image. The user can select whether to view the left or right monoscopic view. Users without a physical stereo viewing device can see the media in monoscopic form by selecting to use either the right or left monoscopic views." Thus, Swift et al. discloses common data including data corresponding to several views, left and right image views, and displaying a monoscopic, two-dimensional image based on a selectively extracted view from one of the left and right views. It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the apparatus of Isono et al. so that the common data includes image data corresponding to several views. One would have

been motivated to make such a modification to the invention of Isono so that the common data already includes the left and right image view of the three-dimensional data and the circuit for converting digital image signals into a three-dimensional image signal as mentioned in Column 7, lines 46 – 52, may be omitted. It would have also been obvious to one having ordinary skill in the art at the time the invention was made to further modify the invention of Isono et al. to include selectively extracting one of the two left and right stereoscopic images views for the two-dimensional display image. One would have been motivated to make such a modification to the invention of Isono so that memory and system resources may be saved in that a separate monoscopic, two-dimensional image is not required for either stereoscopic or monoscopic image viewing. Additionally, users who prefer the two-dimensional display rather than the three-dimensional display may be given the option of viewing three-dimensional images in a two-dimensional mode. The rejection of claims 1 and 17 is incorporated by reference as appropriate.

Isono/Yamashita and Swift et al. as applied to claims 5, 9, and 13 teach of the equipment of claims 6 – 8, 10 – 12, and 14 – 16. Column 4, lines 32 – 34, states, "A parallax barrier is electrically and programably displayed on the whole screen of the panel 28 in the 3D mode and a portion of the screen in the (2+3) or (2+3)D) mode." Lines 45 – 46 state, "No parallax barrier is displayed in the 2D mode." Figures 11 and 13 show the composition of the parallax barrier including a liquid crystal layer placed between polarizing plates and glass plates. Column 3, lines 6 – 12, states, "A stripe barrier is electronically generated on the liquid crystal panel surface of the second layer.

The image on the liquid crystal panel surface of the first layer can be stereoscopically seen. Further, since the generation of the stripe barrier can be electrically programably changed, a 3D image of an arbitrary number of view points ca be displayed." Thus, the display portion of Isono includes a liquid crystal device electrically selecting the presence or absence of a parallax optic. The electrically programmable parallax barrier including the polarizing plates of Figures 11 and 13 disclose the patterning phase contrast plate of claims 7, 11, and 15 and selectively performing pattern display of a parallax barrier of claims 8, 12, and 16. The rejection of claims 1 and 17 is incorporated by reference as appropriate.

Isono et al./Yamashita as applied to claim 17 teaches of the equipment of claim 18 except where said common data includes data corresponding to left and right eye images and said control portion generates the data for the display of said two-dimensional image based on portions of said data corresponding to said several views read from memory. Isono discloses a switching means for causing optical parallax to be selectively generated with respect to images displayed. When the switching means attains a state where the optical parallax is not generated, a two-dimensional image is displayed as stated in Column 4, lines 45 – 46, "No parallax barrier is displayed in the 2D mode." Figures 2 and 9 show a plurality of display elements making up the display panels 28 and 46. Columns 9 and 10 describe mapping the plurality of display elements to data corresponding to several views. Swift et al. teaches of an electronic stereoscopic media delivery system for distributing stereoscopic media in electronic form. Column 2, lines 29 – 44, states, "The preferred embodiment addresses the

problem of delivering stereoscopic media in electronic form (images, videos, animations, object models, etc.). Firstly, it provides a single format with independent right and left channels (with an option for mixed or combined right and left channels) to represent the stereoscopic media. Secondly, it provides a means of displaying stereoscopic media inside a movable windowed area while eliminating pseudostereo conditions during movement. Thirdly, it provides automatic and manual optimization adjustments such as parallax shift adjustment, brightness control, color adjustment, and cross-talk reduction to the stereoscopic media based on viewing hardware, monitor size, and media content for optimal viewing quality. Fourthly, it provides seamless support for monoscopic (2D) viewing modes allowing delivery of said stereoscopic media in a normal 2D viewing mode." Column 6, lines 32 – 46, states, "This invention can have greater distribution and market penetration since it is not dependent upon a physical viewing device. This viewing system can be toggled to display monoscopic, as well as various stereoscopic modes (color anaglyph, gray anaglyph, line interleaved, page-flipping, cross-eye, parallel viewing, etc.). In monoscopic mode, the image appears in 2D like other 2D web based images which allows all web users to view the images in 2D even if they do not have a stereoscopic viewing device.

This is accomplished by showing either the left or right mono image. The user can select whether to view the left or right monoscopic view. Users without a physical stereo viewing device can see the media in monoscopic form by selecting to use either the right or left monoscopic views." Thus, Swift et al. discloses common data including data corresponding to several views, left and right image views, and displaying a

monoscopic, two-dimensional image based on a selectively extracted view from one of the left and right views. It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the apparatus of Isono et al. so that the common data includes image data corresponding to several views. One would have been motivated to make such a modification to the invention of Isono so that the common data already includes the left and right image view of the three-dimensional data and the circuit for converting digital image signals into a three-dimensional image signal as mentioned in Column 7, lines 46 – 52, may be omitted. It would have also been obvious to one having ordinary skill in the art at the time the invention was made to further modify the invention of Isono et al. to include generating the data for the display of a two-dimensional image based on one of the left or right stereoscopic images views for the two-dimensional display image. One would have been motivated to make such a modification to the invention of Isono so that memory and system resources may be saved in that a separate monoscopic, two-dimensional image is not required for either stereoscopic or monoscopic image viewing. Additionally, users who prefer the two-dimensional display rather than the three-dimensional display may be given the option of viewing three-dimensional images in a two-dimensional mode.

Yamashita clearly provides left and right eye images as specified in the rejection to claim 17 above, which is incorporated by reference.

Isono/Yamashita and Swift et al. as applied to claim 18 teach of the equipment of claim 19. Isono in view of Swift teaches of displaying a two-dimensional image based on common data. It is inherent in the invention of Isono that the display panel can only

display up to a predetermined amount of data corresponding to its resolution. Additionally, as taught by Swift et al., the two-dimensional image to be displayed on the display panel is duplicated from one of the left or right image views read from the common data in memory.

Allowable Subject Matter

Claim 20 stands objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. The allowable subject matter was indicated in a previous Office Action.

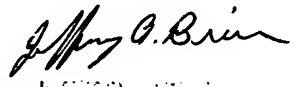
Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eric V. Woods whose telephone number is 571-272-7775. The examiner can normally be reached on M-F 7:30-4:30 alternate Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Razavi can be reached on 571-272-7664. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Eric Woods



JEFFREY BRIEN
PRIMARY EXAMINER

11 September 2005